

cobra
DYNACORD

World's First
Compact Line-Array System
Pat. Pent.

english

Philosophy


COASTERS in Concert, Chicago


MP-3-Festival, Regensburg



Turntablist Extravanganza, Japan


Elton John Cover-Band, Japan


Live-Concert, Taiwan


Lufthansa Event, Germany

Line arrays have now become the preferred solution in the professional concert sound business. On account of their directivity, projection and low distortion, line arrays are considerably more suitable for providing high quality sound reinforcement to large listening areas — especially those extending widely in a horizontal plane — than classical systems with their narrow horizontal focus.

Conventional line arrays are large, heavy, expensive and extremely costly to set up. They are therefore seldom used for small to medium-sized applications despite their advantages in terms of sound quality.

The brand new **DYNACORD COBRA compact line array systems** COBRA 2 and COBRA 4 on the other hand are extremely compact, simple to set up and cost efficient. They therefore provide line array performance in the type of situations where conventional, large format line arrays can offer no economically viable solution.

The extremely wide horizontal directivity of the DYNACORD COBRA compact line array systems (due to their generation of cylindrical sound waves) means they can provide coverage to large audience areas without the comb-filter-like effects that impair the sound quality of conventional horizontal clusters.The shallow and precisely defined vertical directivity, free from strong vertical ‘side lobes’, avoids the undesired radiation of sound towards ceiling and floor areas, eliminating to a large extent the interference produced by reflections.

Typical User Comments:

Chuck Walthall (Walthall Associates USA)
"The Cobra´s high-fidelity purity and sonic output is very neutral and transparent from such a compact system, The vocal articulation and high-fidelity impact is likened to a large scale system with massive amplification. The package is perfectly fitted for small to medium PA applications and the "plug & play" simplicity is second to none. One of the most important considerations for any sound reinforcement crew is setup time and the Cobra redefines plug & play in the audio industry, thus greatly reducing operating costs by freeing up staff to work on the projects”.

Christopher Holder (Audio Technology AUSTRALIA)
"For example, we were taking out a 6-tonne truck and now we´re travelling with a 4-tonne truck – and it´s only two-thirds full. With Cobra we can travel with less crew, get the gear in and out more quickly and have better sound. So it just wins in all departments…
…..It´s completely stable top to bottom and at all levels – from idling to flat out. There´s also a warmth that comes with the three-way driver configuration. If you go from a horn to an 8- or 12-inch, I don´t think you get that amazing clarity in the vocal range that Cobra´s midrange drivers offer”.

SONAR 2002 (Barcelona SPAIN)
During the three days of Festival was arranged the COBRA-System sound for LAB space, where was combined several performance of House, techno and chill-out music. Dynacord received from all the Sonar staff the congratulations, for the result and coverage of Festival. Mr. Pedri, the engineer of Festival, said:” It´s great, the sound is like Hi-fi, unbelievable. It´s really clear wherever you go from all the audience areas. It´s just Fantastic”.

- **Groundstack or Flying**
- **Hornloaded SPL**
- **Line-Array Performance**
- **Easy Handling**


Olympiastadion , Berlin

cobra DYNACORD

Components

COBRA-Top



COBRA-TOP - ***600 watts RMS / 1200 watts cont.program/ 8 ohms***
Passive 3-way fullrange / mid-high component of the COBRA-2 system. Capable of being flown. Equipped with a 15" Electro-Voice EVX155 speaker for the low frequency range, a coaxially arranged midrange line array consisting of four C 8 conical MF horns and a DH 2T titanium driver with a CD horn for the high frequency range.

COBRA-Top



COBRA-SUB - ***600 watts RMS / 1200 watts cont.program/ 8 ohms***
Bass-reflex subwoofer armed with an Electro-Voice 18" EVX 180 B driver. Capable of being flown. Countersunk grooves for secure stacking and four ANCRA flying rails for flown sub-arrays are included.

COBRA-4 FAR - ***800 watts / 400 watts / 400 watts cont.program/ 8 ohms per way***
Active 3-way farfield mid-high component in the COBRA-4 system. Capable of being flown. Identically equipped in the low- and medium-frequency ranges to the COBRA-4 TOP but with an additional HF line array consisting of three Electro-Voice DH2T 1" titanium drivers on an HF waveguide horn.



COBRA-4 Far

COBRA-4 TOP - ***800 watts / 400 watts / 200 watts cont.program/ 8 ohms per way***
Active 3-way nearfield mid-high component in the COBRA-4 system. Capable of being flown. Equipped with a 15" Electro-Voice EVX155 speaker for the low frequency range, a coaxially arranged midrange line array consisting of four C 8 conical MF horns and a DH 2T titanium driver with a CD horn for the high frequency range.



COBRA-4 Top

COBRA PWH - ***600 watts RMS / 1200 watts cont.program/ 8 ohms***
Planar waveguide horn subwoofer with Electro-Voice 18" EVX 180 B driver for especially powerful and penetrating bass reproduction in the COBRA-2 and COBRA-4 systems.

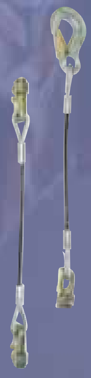


COBRA-4 PWH



CSR-12 - ***2x 1200 watts / 4 ohms SUB and 2x 1200 watts / 4 ohms TOP***
Ready-cabled 12 U stereo amp rack with pre-programmed DSP 244 controller, two L2400 power amps for the sub and mid-high ranges as well as the CP-44 connector panel for the LF controller, the speaker system cabling and the AC connection.

CSR-4 - ***4x 1200 watts / 4 ohms für SUB, LOW, MID und HIGH***
Ready-cabled 12 U mono amp rack with programmed DSP 244 controller, two L2400 power amps for the sub-, low-, mid- and high-frequency ranges as well as the CP-84 connector panel for the LF controller, the speaker system cabling and the AC connection.



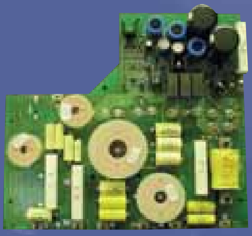
Rigging for COBRA Systems

TC-04	2" truss clamp with an M12 ring nut to attach the CSST COBRA rigging wire.
CSST	rigging wire with snap-hook and double stud for hanging the top COBRA cabinet.
CSSM	connecting wire with double studs each side for connecting the cabinets to one another.
WS-04 & WS-08	adjuster-belt for determining the angle of tilt of the entire 'wing' (4m and 8m).

CSW-25
Wedge set consisting of two 2.5° wedges that can be placed at the front or back of the cabinets to aim the array components at the listening areas.



Voice Coil Tracking Protection
All channels (Sub, Low, Mid, and High) of COBRA system components employ fully electronic protection circuitry to provide the highest dynamic range possible. This voice coil tracking protection allows driving the cabinets using power amps that provide extreme power output capacity of up to 1200 watts into 8 ohms, per audio channel..



CP-44 und CP-84
CP-44 and CP-84 stereo connection panel with XLR-NF controller, loudspeaker system connection sockets (COBRA-2: CP-44 and COBRA-4: CP-84) as well as 16A CEE mains connector.







COBRA-2 SYSTEM

The COBRA-2 SYSTEM is designed to provide high-quality sound reinforcement for events in small to medium-sized marquees or halls covering distances up to 40 metres and areas in the region of 1,000 square metres. The COBRA-2 SYSTEM produces a maximum SPL of 137 dB L + 137 dB R in the medium- and high frequency ranges and up to 141 dB in the bass.

In its basic configuration, the COBRA-2 SYSTEM consists of four COBRA TOP midrange/high-frequency enclosures, four COBRA SUB subwoofers, a ready cabled and programmed 12 U amp rack, the CSR-12, as well as the necessary 4-core loudspeaker cables and a 2.5° wedge set (comprising a pair of wedges that can be placed at the front or back of the cabinets) to aim the COBRA TOPs at the listening area. The coverage pattern of the COBRA-2 SYSTEM is 120° in the horizontal plane and 15° in the vertical.

Up to six COBRA TOPs and six COBRA SUBs can be driven by the CSR-12 AMP RACK without difficulty. To allow for expansion of the system, the CSR-12 has room for an additional 3U power amplifier (sub extension, separate front-/side-fill or monitor), which gets its current from the CP-44 connector panel.







cobra-2

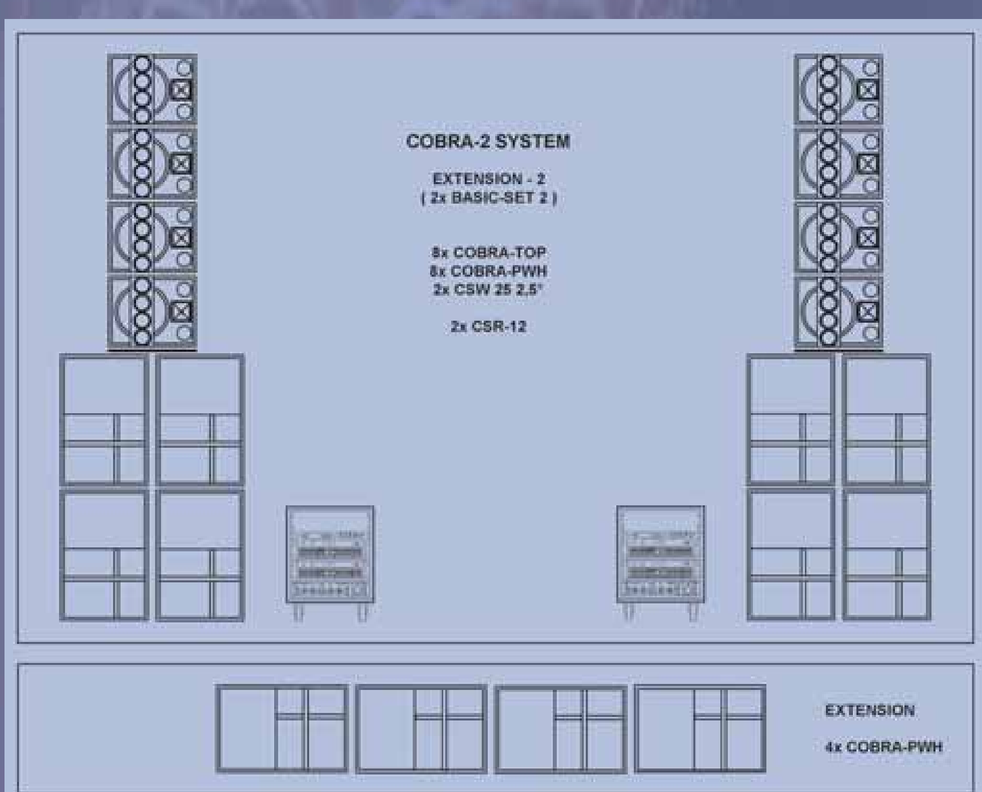


The largest sensible configuration of the COBRA-2 SYSTEM consists of one COBRA-2 array per side (four TOPs and 4-6 SUBs per side). For especially powerful and penetrating bass reproduction, suitable for a wide range of types of music and venue, COBRA PWH bass horns can be integrated into the COBRA-2 SYSTEM.

Since doubling the number of COBRA TOP enclosures halves their vertical radiation angle, special attention must be paid to the way they are aligned – regardless of whether they are flown or stacked.



A COBRA TOP has a coverage pattern of 120° x 30° (horizontal and vertical). Two COBRA TOPs stacked directly on top of one another have a coverage pattern of 120° x 15° and four stacked cabinets, 120° x 7.5°. With a ground stack, it is easy to aim the TOP cabinets at the listening area by placing CSW-25 2.5° wedges between the SUBs or the PWHs.





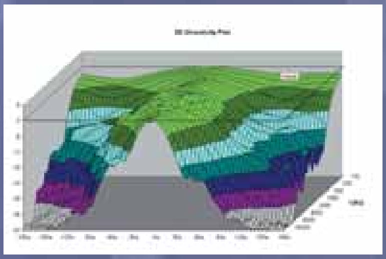
cobra-4

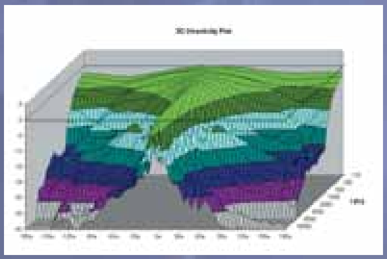
COBRA-4 SYSTEM

The active 4-way COBRA-4 SYSTEM is designed to project over distances of up to 80 metres in medium-sized marquees, halls and open-air venues and produces SPLs at the FOH position, 30 metres from the stage, of 110 dB in the medium- and high-frequency ranges and up to 120 dB in the bass — the values typically required by a Top Forty band.

Through the use of two COBRA-4 TOPs and a COBRA-4 FAR, optimal line-array performance can be achieved without time-consuming tinkering.

With the COBRA-4 SYSTEM, in the vicinity of the PA, the vertical coverage angle in the high frequency range is particularly wide, to cover the areas directly in front of the stage.







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cobra-4



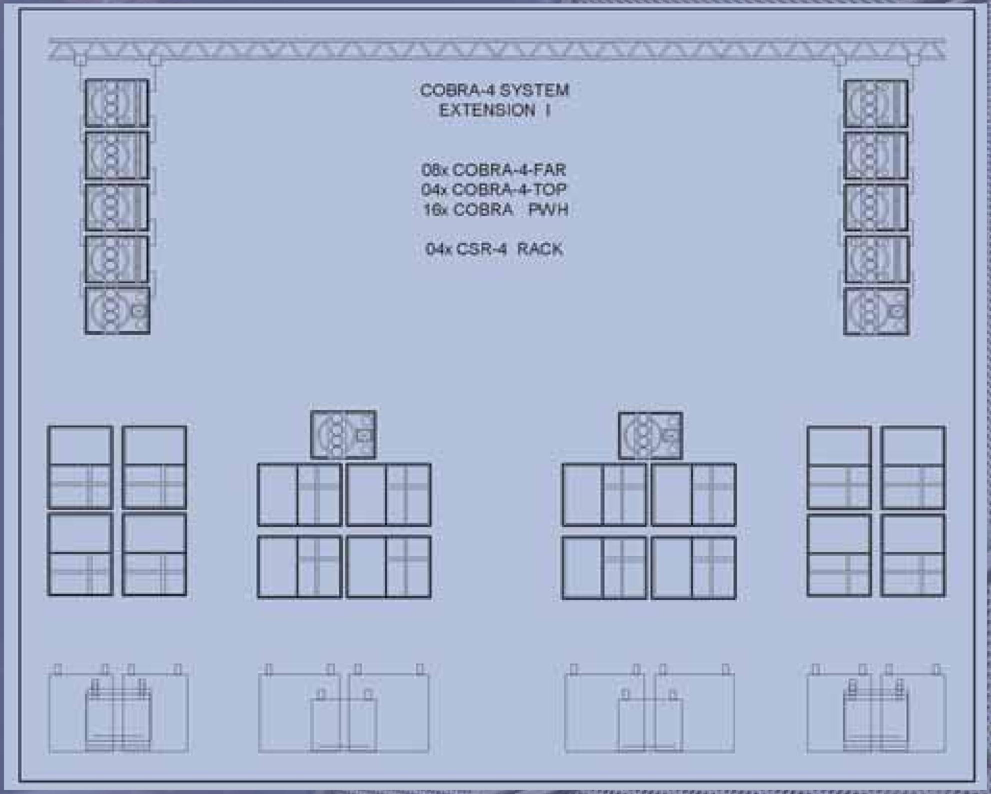
To project over long distances, a COBRA-4 FAR, which has a coverage pattern of 90° x 5° in the high frequency range, is positioned at the top of the array. For the low frequency range and the midrange, the same components are used as in the COBRA-4 TOP, so the low and midrange line array continues in an unbroken line.

In all, eight COBRA PWH bass horns are used to generate the sound pressure levels and projection typically required by Top Forty bands and these can be stacked or arrayed as dictated by the architecture of the room.

The COBRA-4 SYSTEM is driven by two ready-cabled and programmed CSR-4 amp racks with a DSP 244 controller, two L2400 power amplifiers and a CP-84 connector panel.



The illustration shows a medium-sized COBRA-4 configuration for typical medium-sized open-air events in a city.
It consists of a COBRA-4 system and additional PWH bass horns as well as two line-arrays each consisting of four flown COBRA-4 FAR and 1 - 2 COBRA-4 TOP cabinets. The lowest of the COBRA-4 TOPs (nearfield) and the COBRA-4 FAR adjacent have each been tilted 5° downwards, whilst the highest three COBRA-4 FARs hang in a straight line. Using the adjuster-belt, the central axis of these three COBRA-4 FARs is aimed at the most distant third of the area to be covered. For particularly wide (> 15m) applications, it makes sense to place additional COBRA-4 TOPs on top of the stacked COBRA PWH bass array, to cover the area directly in front of the stage.



SPECIFICATIONS

SYSTEMS	COBRA-2 SYSTEM		COBRA-4-SYSTEM		
TYPE	COBRA-SUB	COBRA-TOP	COBRA-PWH	COBRA-4-TOP	COBRA-4-FAR
ORDER No	112 868	112 869	112 895	112 898	112 897
CABINET	SUBWOOFER	MID-HIGH CAB.	SUBWOOFER	MID-HIGH CAB.	MID-HIGH CAB.
CABINET TYPE	VENTED	PASSIVE 3-WAY	HORN LOADED	ACTIVE 3-WAY	ACTIVE 3-WAY
IMPEDANCE	8 OHMS	8 OHMS	8 OHMS	-----	-----
LO-MID-HIGH	-----	-----	-----	8 - 8 - 8 OHMS	8 - 8 - 8 OHMS
RATED POWER RMS	600 WATTS	600 WATTS	600 WATTS	-----	-----
LO-MID-HIGH (WATTS)	-----	-----	-----	400 - 200 - 100	400 - 200 - 200
PROGRAM POWER	1200 WATTS	1200 WATTS	1200 WATTS	-----	-----
LO-MID-HIGH (WATTS)	-----	-----	-----	800 - 400 - 200	800 - 400 - 400
SPL 1 WATT / 1 M	98 dB	100 dB	101 dB	100 dB	100 dB
max. SPL / 1 M	129 dB	131 dB	132 dB	131 dB	131 dB
FREQ. RANGE (-10dB)	38Hz - 300Hz	50Hz - 15kHz	38Hz - 160Hz	50Hz - 15kHz	50Hz - 15kHz
DISP. ANGLE 1kHz (-6dB)	-----	H 120° x V 30°	-----	H 120° x V 30°	H 120° x V 30°
DISP. ANGLE 10kHz (-6dB)	-----	H 90° x V 40°	-----	H 90° x V 40°	H 90° x V 5°
INT. PASS. X-OVER	-----	700Hz - 4kHz	-----	-----	-----
REC. ACTIVE X-OVER	124 Hz	124 Hz	124 Hz	124Hz-700Hz-4kHz	124Hz-700Hz-4kHz
VOICE COIL PROT.	SUB	LOW-MID-HIGH	SUB	LOW-MID-HIGH	LOW-MID-HIGH
COMPONENTS HIGH	-----	DH 2T / HPT 94	-----	DH 2T / HPT 94	DH2T LINE ARRAY
ORDER #	-----	355 391 / 357 979	-----	355 391 / 357 979	3x 355 391
COMPONENTS MID	-----	C8 LINE ARRAY	-----	C8 LINE ARRAY	C8 LINE ARRAY
ORDER #	-----	4x 361 376	-----	4x 361 376	4x 361 376
COMPONENTS LOW	-----	EVX155	-----	EVX155	EVX155
ORDER #	-----	359561	-----	359561	359561
COMPONENTS SUB	EVX 180 B	-----	EVX 180 B	-----	-----
ORDER #	349 397	-----	349 397	-----	-----
CONNECTORS FR	-----	4-pole 1+/1-	-----	-----	-----
CONN. HIGH	-----		-----	8-pole 4+/4-	8-pole 4+/4-
CONN. MID	-----	"SYSTEM" 4-pole 2+/2-	-----	8-pole 3+/3-	8-pole 3+/3-
CONN. LOW	-----		-----	8-pole 2+/2-	8-pole 2+/2-
CONN. SUB	4-pole 1+/1-	-----	4+8-pole 1+/1-	-----	-----
DIMENSIONS mm (WxHxD)	600 x 615 x 717	600 x 495 x 717	615 x 910 x 823	600 x 495 x 717	600 x 495 x 717
WEIGHT	58,0 kg	60,0 kg	72,0 kg	54,5 kg	63,5 kg
CABINET	18 mm	18 mm	18 mm	18 mm	18 mm
STYLE	BIRCH PLYWOOD	BIRCH PLYWOOD	BIRCH PLYWOOD	BIRCH PLYWOOD	BIRCH PLYWOOD
OUTFIT	BLACK	BLACK	BLACK	BLACK	BLACK
COATING	POLYURETHANE	POLYURETHANE	POLYURETHANE	POLYURETHANE	POLYURETHANE
STEEL GRILLE	POWDER COATED	POWDER COATED	POWDER COATED	POWDER COATED	POWDER COATED
HANDLES	2 pcs.	2 pcs.	6 pcs.	2 pcs.	2 pcs.
CASTORS	4x 100mm	4x 100mm	4x 100mm	4x 100mm	4x 100mm
WARRANTY	36 MONTH	36 MONTH	36 MONTH	36 MONTH	36 MONTH

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